Claims

What is claimed is:

1. A method for providing data service to locations an extended distance from an access network, the method comprising:

generating a downstream signal;

providing the downstream signal to a first transmitter and a second transmitter;

transmitting the downstream signal over media to a location;

generating an upstream signal;

providing the upstream signal to a first receiver and a second receiver; and

receiving the upstream signal over the media from the location.

2. The method of claim 1, wherein said providing includes providing the downstream signal to the first transmitter, the second transmitter or a combination of the first transmitter and the second transmitter.

3. The method of claim 1, wherein said transmitting the downstream signal includes transmitting the downstream signal from the first transmitter, the second transmitter or a combination.

4. The method of claim 3, wherein said transmitting the downstream signal includes transmitting the downstream signal from the first transmitter at a first frequency.

5. The method of claim 3, wherein said transmitting the downstream signal includes transmitting the downstream signal from the second transmitter at a second frequency.

6. The method of claim 3, wherein said transmitting includes transmitting the downstream signal from the first transmitter and the second transmitter over a same twisted wire pair.

7. The method of claim 3, wherein said transmitting includes transmitting the downstream signal from the first transmitter over a first twisted wire pair and transmitting the downstream signal from the second transmitter over a second twisted wire pair.

8. The method of claim 1, wherein said providing includes providing the upstream signal to the first receiver, the second receiver or a combination of the first receiver and the second receiver.

9. The method of claim 1, wherein said receiving the upstream signal includes receiving the upstream signal at the first receiver, the second receiver or a combination.

10. The method of claim 9, wherein said receiving the upstream signal includes receiving the upstream signal at the first receiver at a first frequency.

11. The method of claim 9, wherein said receiving the upstream signal includes receiving the upstream signal at the second receiver at a second frequency.

12. The method of claim 9, wherein said receiving includes receiving the upstream signal at the first receiver and the second receiver over a same twisted wire pair.

13. The method of claim 9, wherein said receiving includes receiving the upstream signal at the first receiver over a first twisted wire pair and receiving the upstream signal at the second receiver over a second twisted wire pair.

14. A transceiver for use in an access network providing data services, the transceiver including:

a media connecting the access network to a location;

a first transmitter for transmitting a first signal at a first frequency;

a second transmitter for transmitting the first signal at a second frequency;

a first receiver for receiving a second signal at a third frequency; and

a second receiver for receiving the second signal at a fourth frequency.

15. The transceiver of claim 14, further comprising means for receiving the first signal.

16. The transceiver of claim 15, wherein the means for receiving routes the first signal to the first transmitter when the media is over a predetermined distance.

17. The transceiver of claim 15, wherein the means for receiving routes the first signal to the second transmitter when the media is under the predetermined distance.

18. The transceiver of claim 15, wherein the means for receiving splits the first signal and routes a first portion to

the first transceiver and a second portion to the second transceiver.

19. The transceiver of claim 14, further comprising a combiner for combining an output from the first transmitter and an output from the second transmitter.

20. The transceiver of claim 19, wherein an output from the combiner is transmitted over the media.

21. The transceiver of claim 14, wherein the media includes a twisted wire pair.

22. The transceiver of claim 14, further comprising means for routing the second signal to the appropriate receiver.

23. The transceiver of claim 22, wherein the means for routing routes the second signal to the first receiver when the media is over a predetermined distance.

24. The transceiver of claim 22, wherein the means for routing routes the second signal to the second receiver when the media is under a predetermined distance.

25. The transceiver of claim 22, wherein the means for routing is capable of splitting the second signal and routing a first portion to the first receiver and a second portion to the second receiver.

26. The transceiver of claim 14, wherein the media includes two sets of twisted wire pair.

27. The transceiver of claim 26, wherein an output from the first transmitter is sent over a first twisted wire pair and an output from the second transmitter is sent over a second twisted wire pair.

28. The transceiver of claim 26, wherein an input to the first receiver is received over a first twisted wire pair and an input to the second receiver is received over a second twisted wire pair.

29. The transceiver of claim 14, further comprising a combiner for combining an output of the first receiver and the second receiver.

30. The transceiver of claim 14, wherein the first frequency and the third frequency are the same.

31. The transceiver of claim 14, wherein the second frequency and the fourth frequency are the same.

32. The transceiver of claim 14, wherein the data services are DSL services.

33. The transceiver of claim 14, wherein the transceiver is located either upstream or downstream.

34. A transceiver for providing DSL service over multiple lines or multiple frequencies, the transceiver comprising:

a first transmitter;

a second transmitter;

an input line coupled to said first transmitter and said second transmitter and capable of selectively providing a signal to the first transmitter, the second transmitter, or both the first and second transmitter;

a first transmission line coupled to the first transmitter and capable of being coupled to the second transmitter;

a second transmission line capable of being coupled to the second transmitter;

a switching device for selectively coupling the first transmission line or the second transmission line to the second transmitter;

a first receiver coupled to the first transmission line;

a second receiver selectively coupled to either the first transmission line of the second transmission line; and

an output line coupled to said first receiver and said second receiver and capable of receiving signals from the first receiver, the second receiver or both receivers.

35. The transceiver of claim 34, wherein when the DSL signals are being transmitted over a long distance, the second transmitter and the second receiver will be coupled to the second transmission line.

36. The transceiver of claim 35, wherein the first transmitter, the second transmitter, the first receiver and the second receiver all operate on the same frequency.

37. The transceiver of claim 36, wherein the frequency is a low range frequency.

38. The transceiver of claim 37, wherein the low range frequency is in the approximate range of .138 to 3.75 MHz.

39. The transceiver of claim 34, wherein the low range frequency is approximately .138 to 3.75 MHz.

40. The transceiver of claim 30, wherein when the DSL signals are transmitted over a short distance, the second transmitter and the second receiver are coupled to the first transmission line.

41. The transceiver of claim 30, wherein the first transmitter and the second transmitter are selectively adjustable.

42. The transceiver of claim 30, wherein the first transmitter transmits at a first frequency and the second transmitter transmits at a second frequency.

43. The transceiver of claim 30, further comprising:

means for determining the frequencies for the first transmitter, the second transmitter, the first receiver and the second receiver; and

means for determining whether to use one or two transmission lines.

44. The transceiver of claim 30, wherein the transceiver provides DSL service to multiple locations.

45. The transceiver of claim 30, wherein the transceiver provides DSL service to multiple locations.

46. The transceiver of claim 30, wherein the first transmitter is a low frequency transmitter and transmits DSL signals to a location which is not in close proximity.

47. The transceiver of claim 30, wherein the first transmitter is a high frequency transmitter and transmits DSL signals to a location which is not in close proximity.

48. The transceiver of claim 24, wherein the first transmission line provides service to one location and the second transmission line provides service to a second location.

49. A method for providing data communications between an access network and remote locations, the method comprising:

receiving a downstream signal;

determining an appropriate frequency for transmission of the downstream signal;

providing the downstream signal to a transmitter cable of transmitting the downstream signal at the appropriate frequency; and

transmitting the downstream signal.

50. The method of claim 46, wherein downstream signals traveling a large distance are transmitted at a lower frequency.

51. The method of claim 46, wherein said determining includes determining that the downstream signal should be transmitted at multiple frequencies.